



Agenda Item 3: Report on activities, deliverables and implementation progress of the Interop WG and Subgroups

STRENGTHENING THE MANAGEMENT, RESILIENCE AND EVOLUTION OF AMHS SYSTEMS IN THE SAM REGION

(Prepared by SG CNS/AMHS)

SUMMARY

The SAM Region has achieved a high level of implementation and interoperability of Aeronautical Message Handling Systems (AMHS), which constitute an essential element for ensuring the safe and efficient exchange of ATS messages among States of the Region and with other ICAO Regions. As a result of the technological evolution of aeronautical communications and the increasing introduction of digital services, regional challenges are no longer limited to the implementation of new systems, but are focused on ensuring their sustainability, resilience, interoperability and future evolution.

The deliberations held during the Seventh Workshop/Meeting of Supervisors and Operators of AMHS COM Centres of the SAM Region (COM AMHS/7), as part of SG CNS/AMHS, identified the need to strengthen regional coordination and move towards a harmonized approach to AMHS management. In this context, this Working Paper proposes the establishment of a Regional Programme to consolidate the experience accumulated by States, develop regional guidance material, strengthen technical governance and support the coordinated evolution of AMHS systems in the SAM Region.

References:

- Global Air Navigation Plan (GANP).
- CAR/SAM Regional Air Navigation Plan (ANP).
- Final Report of the Seventh Workshop/Meeting of Supervisors and Operators of AMHS COM Centres of the SAM Region (COM AMHS/7).

1. Background

1.1 The implementation of the Aeronautical Message Handling System (AMHS) constitutes one of the main achievements of the SAM Region in the modernization of aeronautical communications. Thanks to the efforts made by States and the continued support of ICAO, the Region currently has a consolidated infrastructure that ensures the interoperable exchange of ATS messages and contributes directly to the safety, continuity and efficiency of air navigation services.

1.2 At the same time, the evolution of operational concepts defined by ICAO, the digital transformation of CNS/ATM systems and the future introduction of services based on System Wide Information Management (SWIM) pose new challenges that require strengthened regional coordination and the adoption of a long-term strategic vision for AMHS management.

1.3 In order to analyse this situation, the SAM Regional Office organized COM AMHS/7, bringing together specialists responsible for the implementation, operation and administration of AMHS systems in the Region. The presentations made by States, as well as the technical exchanges held during

the Workshop, made it possible to establish an updated assessment of the status of AMHS systems, identify common challenges and define opportunities to strengthen regional cooperation.

1.4 The conclusions reached during the Workshop demonstrated that the Region has attained a level of maturity that makes it appropriate to evolve from an approach centred on the administration of national systems towards a regional model aimed at harmonizing AMHS management, consolidating acquired knowledge, strengthening the resilience of aeronautical communications and preparing for the future evolution of these systems in accordance with the objectives of the Global Air Navigation Plan (GANP), the Regional Air Navigation Plan (ANP) for the SAM Region, and initiatives promoted by GREPECAS and SAM/IG.

2. Analysis

2.1 The presentations made by States during COM AMHS/7 confirmed that AMHS systems in the Region maintain high levels of availability and continue to provide reliable support for the international exchange of ATS messages. However, they also showed that the evolution of these systems has entered a new stage, characterized by challenges that go beyond technological implementation and require strengthened regional management of the technical, operational and strategic aspects associated with their operation.

2.2 Among the main issues identified during the Workshop were the need to preserve the technical knowledge accumulated by the Region, strengthen the availability of specialized personnel, harmonize operational procedures and ensure the continuous updating of regional technical information. Participants agreed that tools such as the ATS Management Centre (AMC), the Regional Directory, the Network Inventory and the procedures associated with the international routing of ATS messages are essential components for regional AMHS management and require a continuous updating and maintenance process.

2.3 In particular, the need to continue reviewing and optimizing the international routing of ATS messages was highlighted, including the updating of the AMHS Directory, Network Inventory, PRMDs, addressing and routing tables. These activities should be carried out in a coordinated manner between States and the SAM Regional Office, including, when necessary, coordination with other ICAO Regions.

2.4 The Workshop also identified the need for regional indicators to objectively measure AMHS performance, facilitating trend analysis, the identification of improvement opportunities and the follow-up of regional actions. In this regard, the implementation of a Regional Key Performance Indicator (KPI) Programme was considered a fundamental element for strengthening technical governance and supporting decision-making based on objective information.

2.5 As a first stage of this initiative, it was agreed to begin the monthly collection of three basic indicators: number of ATS messages transmitted, number of ATS messages received, and number of Non-Delivery Reports (NDRs). The information will be consolidated at regional level in order to establish a baseline, identify operational trends and support monitoring of the evolution of the AMHS service.

2.6 The experiences shared by States regarding different contingency situations also demonstrated the desirability of strengthening the regional resilience of aeronautical communications through a harmonized approach that allows technical and operational alternatives to be analysed in order to increase response capability in the face of events affecting AMHS availability. Participants agreed that this analysis should consider architecture, governance, sustainability, operational continuity and cybersecurity aspects, avoiding limiting the study to a specific technological solution.

2.7 In addition, it was considered appropriate to formalize a regional rapid-support mechanism for handling operational incidents (Quick Support Procedure – QSP), based on direct

coordination among national focal points through previously agreed communication channels, with the aim of reducing response times to events that may affect the international exchange of ATS messages.

2.8 The discussions held during the Workshop also recognized that the Region currently has a significant body of knowledge, procedures and good practices developed by States throughout the implementation and operation of their AMHS systems. However, this knowledge remains distributed among the different administrations and has not been consolidated within a regional framework that facilitates its systematic use and ensures its continuity.

2.9 In this context, the need to strengthen regional training activities and knowledge-transfer mechanisms was also highlighted, with a view to supporting generational renewal of personnel responsible for the operation and administration of AMHS systems and preserving the technical capabilities developed by the Region.

2.10 Consequently, participants considered that the time has come to institutionalize regional AMHS management through a programme that integrates strategic planning, technical documentation, knowledge management, performance measurement and the analysis of new capabilities required to support the evolution of aeronautical communications in the SAM Region. This programme should also serve as a platform to support the implementation of REDDIG III and facilitate the progressive transition towards SWIM-based digital services.

2.11 COM AMHS/7 (SG CNS/AMHS) confirmed that the SAM Region currently has the experience, technical capability and level of maturity required to evolve towards a harmonized regional model for AMHS management.

2.12 The future evolution of these systems requires strengthening regional technical governance, preserving accumulated knowledge, developing common performance-monitoring mechanisms, analysing alternatives that increase the resilience of aeronautical communications, and consolidating a reference framework to guide the coordinated implementation of future regional initiatives.

2.13 In this context, it is considered appropriate to establish a Regional Programme for the Management and Evolution of AMHS Systems, enabling the coordinated development of the regional strategy, implementation planning, regional guidance material and the tools required to support States in the sustainable evolution of their AMHS systems.

3. **Suggested actions**

3.1 The Meeting is invited to:

- a. take note of the information presented in this Working Paper;
- b. support the establishment of the Regional Programme for the Management and Evolution of AMHS Systems in the SAM Region; and
- c. adopt the Draft Conclusion contained in Appendix A to this Working Paper.

APPENDIX A**DRAFT CONCLUSION SAM/IG/34 XX/XX
REGIONAL PROGRAMME FOR THE MANAGEMENT AND EVOLUTION OF AMHS
SYSTEMS IN THE SAM REGION**

Whereas:

- a) the SAM Region has achieved a high level of implementation and interoperability of AMHS systems;
- b) COM AMHS/7 (SG CNS/AMHS) identified opportunities to strengthen regional governance, resilience, knowledge management and the evolution of these systems;
- c) the implementation of REDDIG III and the future introduction of SWIM-based services make it necessary to adopt a harmonized regional approach to AMHS management; and
- d) it is appropriate to consolidate the best practices developed by States and establish regional mechanisms to support the coordinated evolution of these systems,

It is concluded that:

The SAM Regional Office, in coordination with States and with the support of SG CNS/AMHS, will establish a Regional Programme for the Management and Evolution of AMHS Systems, aimed at strengthening regional governance and supporting the coordinated evolution of AMHS systems in the SAM Region.

Within the framework of this Programme, the SAM Regional Office, in coordination with States and with the support of SG CNS/AMHS, will develop and keep updated the regional planning for the management and evolution of AMHS systems, in line with the GANP and the ASBU framework. The Programme will include, inter alia, the establishment and monitoring of Key Performance Indicators (KPIs), regional coordination and operational support mechanisms, knowledge-management and training activities, as well as the technical studies required to strengthen the resilience of aeronautical communications and support the progressive evolution of aeronautical information exchange services towards an environment based on System Wide Information Management (SWIM). The SAM Regional Office will also report to SAM/IG on the progress of these activities for its guidance and follow-up.